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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/614,511	07/11/2000	Wanda Andreoni	CH-1999-0004US1	2057

7590

01/17/2002

Ference & Associates
129 Oakhurst Road
Pittsburgh, PA 15215

EXAMINER

XU, LING X

ART UNIT

PAPER NUMBER

1774

DATE MAILED: 01/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/614,511

Applicant(s)

ANDREONI ET AL.

Examiner

Ling X. Xu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 0200 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicants' amendments filed on 11/29/2001 have been entered. In light of applicants' amendments, previous rejection based on 35 USC 112(2) are now withdrawn. However, the objection of the drawings and the rejection of claims 1-22 based on 35 USC 103(a) still stand.

Drawings - next necessary

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. The claimed subject matter is a compound substituted in the 3- or 4-position of the base unit with electron-donor group and substituted in the 5-position of the base unit with electron-acceptor or p-delocalizing group. The Figure 1 shows only the base unit of the compound. Therefore, the substituents of the claimed compound in the 3- or 4- and 5- position of the base unit must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Applicants fail to amend~~ment~~ the drawings to show every feature of the invention specified in the claims, as required in the prior Office action.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-14 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al. in view of Moore et al. for the reasons of record in Paper No. 3.

4. Claims 15-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al and Moore et al. as applied to claims 1-14 above, and further in view of applicants admission for the reasons of record in Paper No. 3.

Response to Arguments

5. Applicant's arguments have been fully considered but they are not persuasive.

Applicants argue that the applied art falls far short of teaching or suggesting the invention embraced by independent Claims 1, 8, 15 and 19 because Tang does not teach or suggest modifying the relevant electron states through specific substitutions on the quinolate ring.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As stated in the prior Office action, the combination of Tang and Moore teaches that tris (8-quinolinol) aluminum can be substitutions in 3 or 4-position and the 5-position on the quinolate ring. Moore suggests that the effect of quinolate ring substituted with one or more electron donating substituents can shift the hue of emission to lower

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wavelength. The fact that Moore suggests that the substituents can be substituted at all 6 positions does not exclude the possibility that the substituents are substituted in 3 or 4-position and the 5-position. Tang and Moore included the applicants' invention.

Applicants argue that Moore teaches away from the present invention because Moore states that the 3- position on the quinolate ring of the compound has a relatively small influence on the hue of emission. Arguments are not commensurate in scope with the claims. Because the claims recite both 3- and 5- position has to be substituted or both 4- and 5- positions have to be substituted. There is no disclosure in the claims or specification ^{whether} ~~whether~~ the 3-position substituent has a relatively small influence on the hue of emission than any other positions. Even if the present application claims that the 3-position should not have a relatively small influence on the hue of emission, because the term "or" is used in the claim language, the combination of Tang's and Moore's references still reads on the alternate limitations of both 4- and 5- positions being substituted.

Applicants fail to show the claimed compound exhibits superior or unexpected results over the disclosed compounds, as required in the prior Office action. Specifically, applicants fail to provide any examples, experimental data, or any other evidence to show that the claimed compound with electron-donor group being substituted only in the 3- or 4- position and an electron acceptor or p-delocalizing being simultaneously substituted only in the 5- position exhibits superior or unexpected results over any other form of substitution disclosed in Moore. Applicants simply state, see page 5 of the Remark and page 8 of specification, "the quantum efficiency of the

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present invention is higher than any other device made by unsubstituted and undoped Alq₃". The comparison was made only to the unsubstituted and undoped compound with the same base unit.

As stated in the prior Office action, absence of showing unexpected results, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the claimed substituted Alq₃ compound for Tang's and Moore' EL device, because Tang and Moore disclose the use of Alq₃ compound substituted with same or similar groups. One skilled in the art would have been motivated to use the compound with expectation that similar compound in structure will have similar properties and same utilities.

With respect to the rejection of claims 15-22, as stated in the prior Office action, it is well known that an EL device with a three-layer DH structure and two-layer SH-A and SH-B structures can have the same electroluminescent effects. It is also supported by Applicants' statement in the Specification (Page 8, lines 4-10) that the organic EL device could have two or three layers structure in addition to the electrodes.

Applicants argue that the cited statement is the preferred embodiment in compliance with the patent statute. The Examiner disagrees, organic EL device having two or three layers structure between the electrodes is well known in the art and is not applicants' invention. For example, US 5,382,477 (Col. 1, lines 40-67), US 5,597,925 (Col. 2, lines 10-67), and US 5,709,959 (Col. 1, lines 15-67) all disclose that EL device having two or three layers structure between the electrodes is conventional.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 703-305-0395. The examiner can normally be reached on 8:00 - 4:30 Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 703-308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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January 8, 2002

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700

A handwritten signature in black ink, appearing to read "Cynthia H. Kelly", written in a cursive style.